

**Table 1. Level of Additional Effort Resulting from “New” Information or Analysis Requested in EPA Comments on the Draft RI Report, Baseline Human Health Risk Assessment, and Baseline Ecological Risk Assessment**

<b>New<sup>1</sup> EPA Comment Issue</b>	<b>Comment No./Source</b>	<b>Summary of Issue</b>	<b>Level of Additional Effort<sup>2</sup></b>
<b>New Information or Analysis Requested in EPA Comments on the Draft RI</b>			
Reorganization of Sections 3 and 4	EPA RI Comments S46, S48, S49, S86, S104, S164, S165	Reorganize Sections 3 & 4 according to EPA’s suggestions.	3-4 days
Inclusion of revised HST Model outputs in RI	EPA RI Comments G20, S66, S307, S310, S311	Section 3 physical system narrative and HST model output maps will be updated based on the model revision conducted for the FS.	1-2 days to draft once FS model outputs are available.
Vector Velocity Plots	EPA RI Comment S56	Add tide stage and river stage/flow data for both the LWR and LCR to put the model outputs in context.	1-2 days
Section 4 Groundwater/TZW Discussion	EPA RI Comments S187, S188, S190, S191, S264	Expand and update discussion of upland groundwater site selection, overall TZW approach/strengths/weaknesses, current status, etc. in Section 4.	4 weeks
New Source Identification	EPA RI Comments S109, S115	Add information on GNL sites to text and maps.	3-4 days
Dredging/Capping Layer	EPA RI Comments S221, S221	Update the dredging/capping layer on the Section 4 maps and the new maps in the addendum (does not include the Section 5 maps and Section 10 panels, as requested). This also includes the T4 early action abatement and ARCO revetment work.	1 day to update dredge/cap layer once source files are obtained.
Section 4 Historical Narrative and Industry Map Series	EPA RI Comments S90, S91, S95, S141, S142, S290	Create a series of maps in Section 4 that depict the major historical industry types. Expand the Section 4 narrative on historical sources by moving the detailed source information from Section 10 to Section 4. Reference or repeat that source information in Section 10 as needed to support the CSM narrative.	2-3 weeks
Section 4 Stormwater Discussion	EPA RI Comments S136, S137, S147, S150	Add considerable detail on industrial discharges, development of sanitary systems, CSOs, etc.	1.5 weeks
NPDES Permit Violations	EPA RI Comment S183	Provide information regarding permit violations.	2-3 weeks to review DEQ files
Air Permit Violations	EPA RI Comment S205	Provide a list of all permitted air releases and indicate if there	2-3 weeks to review DEQ

<sup>1</sup> EPA comments that request or direct LWG to included new information, data, analyses, and evaluations that were not anticipated, requested, or agreed-upon as part of the initial scoping of these documents.

<sup>2</sup> Additional time will be required for internal LWG review.

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		have been any violations.	files
Section 5 Reorganization	EPA RI Comment S214	Reorganize Section 5 by grouping in separate volumes.	0.5 day
Non-LWG Data	EPA RI Comment S217	Include note on all Section 5 maps that the map includes non-LWG data.	Due to the number of maps, this is a 4+ week GIS effort.
TSS Comparison	EPA RI Comment S238	Compare chemical concentrations associated w/ TSS to concentrations in sediment and water.	1-2 days to reduce data set for comparison and generate comparison.
Grain Size Figures	EPA RI Comment S239	Add a 3-D graphic of % fines/flow/season.	1 day
PCB vs TSS Plots	EPA RI Comment S240	Plot PCB concentrations as a function of the TSS concentrations.	0.5 day
Surface Water Maps	EPA RI Comment S243	Add a map summarizing stations and station types w/ inset table; develop a second set of histograms sorted by stations on east, west, and transects.	1 day
Surface Water Figures	EPA RI Comment S247	Revise figures in the format of Figure 5.3-19.	3-4 days
TZW Maps	EPA RI Comment S257	Instead of TZW maps for all ICs requested by EPA, the LWG will present the TZW plume in Section 4 and combined new comparisons to criteria to be provided in Section 5 use this information to inform the CSM sources summary in Section 10.	2-3 weeks
Subsurface Core Maps	EPA RI Comments G4, S230	Provide, in an RI Appendix, subsurface sediment data maps at the detail provided in the Round 2 Report iAOPC maps for 5 indicator chemicals.	6 weeks.
Gasco and Siltronics Near-bottom Surface Water Data	EPA RI Comments S255, S344, S346	Include this discussion in Section 10.1.	0.5-1 day
Biota Maps	EPA RI Comments S258, G4	Update the biota maps using examples from the R2R.	3 weeks.
Stormwater N&E	EPA RI Comment S334	Provide a table presenting stormwater statistics for the Study Area as a whole, i.e., not parsed by land use categories.	2 days
Tidal Pumping	EPA RI Comment S265	Add general evaluation/discussion of tidal pumping in Section 6.	0.5 day
Sed. Rates vs. Bathymetry Change	EPA RI Comment S268	Add comparison of model-predicted sedimentation rates with bathymetric change in Section 6.	3-5 days
Piper Diagrams	EPA RI Comments S335, S336	Expand the evaluation of major ions (sitewide Piper Diagrams, etc.).	2-3 weeks
Surface Water Particulate	EPA RI Comment S383	Evaluate surface water particulate background concentrations in	2 days

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Concentrations		Section 7.	
Sed. Flux vs. Flow Stage Plots	EPA RI Comment S262	Present plots of sediment flux vs. flow stage.	3 days
Chemical Loading Tables	EPA RI Comment S272	Summarize chemical concentrations used to develop loading estimates.	2-3 days
Watershed Map	EPA RI Comment S320	Provide map depicting size of the watershed, the location of the site relative to the watershed and key features of the watershed (e.g., Newberg Pool and Willamette Falls).	0.5 day
Upland Groundwater Concentration Tables	EPA RI Comment S342	Present the concentrations of upland groundwater COIs for each upland site.	1-2 weeks
Data Lockdown Date	EPA RI Comments S23, S218	Update SCRA database with data collected since June 2008 draft RI data lockdown date, including new data from the downtown reach (City of Portland Phase 2, PGE, MGP), RM 11E sediment characterization, dredged material characterizations (Vigor, Kinder-Morgan, Chevron, Glacier NW, CLD, Ash Grove Cement), US Moorings RI, T4 Abatement, Arco Terminal 22T Revetment, Post Office Bar, Northwest Pipe & Casing, Triangle Park Riparian, Zidell South Waterfront, and EPA’s PBDE sediment data and osprey egg data (the latter to be added to the RA data set also). Update RI Section 5.6 data products and narrative based on the new data. Develop new RM 11 – 11.8 and downtown reach (RM 11.8 – 15.6) surface and subsurface coreplot maps for all sediment ICs. A bibliography of all new studies included in SCRA will be provided.	As indicated in our November 18, 2010 general response to comments, the LWG does not agree to incorporate this request.
Section 10.2 Upland Source Linkage Narrative	EPA RI Comments G8, S81, S107,S235, S306, S313, S314, S318, S326, S327, S352	Revise Section 10.2 format per new outline provided by EPA.	As indicated in our November 18, 2010 general response to comments, the LWG does not agree to incorporate this request.
Cumulative Impact of New Information or Analysis Requested in EPA Comments on the Draft RI			The cumulative impact of EPA’s new requests and requirements for the RI, in the

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			context of all other new EPA requests and requirements, is to delay the resubmittal date by 2.5-3 months, from end of 2010 to early second quarter 2011. This delay is driven primarily by resources and time being diverted to negotiating the unresolved comment, gathering the additional information and/or compiling existing data to support the uncertainty assessment, making major revisions to the draft RI in redline-strikeout (RLSO) format, reconciling comments from LWG reviewers, and producing a final revised draft RI in RLSO for EPA review.
<b>New Information or Analysis Requested in EPA Comments on the Draft Baseline Human Health Risk Assessment</b>			
Risk Management Recommendations	EPA BHHRA Comments General 9, 191	A new document will need to be prepared to present the risk management recommendations separate from the revised BHHRA. EPA is requesting that the term “risk drivers” be removed from the revised BHHRA.	No impact on BHHRA itself. Separate Risk Management Recommendations document will likely require 3 months to prepare.
Change to Exposure Scenarios	EPA BHHRA Comments General 10, General 12(ii), 10, 45, 163, 165	EPA is requiring that the evaluation of ingestion of human milk by infants be included for ALL receptors where PCBs, DDx, and/or dioxins are COPCs.  EPA is requiring the addition of a scenario for combined child/adult exposures to be included in the revised BHHRA (the	Details still need to be finalized, but likely 2 weeks to add as separate scenario.  Likely 2-3 weeks.

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		scenario would add the child risk to the adult risk, which would be modified for 24 years versus the 30 years used in the adult only scenario). For cPAHs, early life exposures using age-dependent adjustment factors will be included in both the child (0-6 years) and the combined child/adult scenarios.	
Summary of Risk Results	EPA BHHRA Comments 75, 76, 78, 92, 97, 177	EPA is requesting that a summary discussion be included at the end of the risk characterization section for each exposure medium evaluated in the revised BHHRA.	2-3 days
Surface Water Data	EPA BHHRA Comments 41, 85	EPA is requiring that near bottom and near surface samples be combined and included in the revised BHHRA as “integrated data” for evaluation of the use of surface water as a drinking water source.	1 week
N-qualified Data	EPA BHHRA Comments 24, 120, 187	EPA is requesting additional analysis of N-qualified sediment and tissue data prior to eliminating a chemical as a COC.	2 weeks
Regional Tissue Data	EPA BHHRA Comments General 5, 23, 26, 95, 168, 193	In order to present regional tissue data in the BHHRA, the following context needs to be provided: concentrations are higher at the Site than in the regional tissue, the sources of the regional tissue concentrations are unknown, regional efforts are underway to reduce concentrations, and additional information about the studies (e.g., fish species, size of fish).	1 week
Request for Additional Information and/or Analyses	EPA BHHRA Comments General 12(i), 110, 111, 113, 115, 118, 153, 156, 157, 159, 160, 185, 195, 197, 199, 206, 207, 208, 211	EPA is requesting that additional information and/or analyses be presented in the BHHRA to support the uncertainty assessment.	1-2 months
PBDE Fish Tissue Data	Email from Chip Humphrey on 11/4/10 (Not included in earlier EPA comments)	EPA is requesting that the PBDE fish tissue data be included in the revised BHHRA.	As indicated in our November 18, 2010 general response to comments, the LWG does not agree to incorporate this request.
Cumulative Impact of New Information or Analysis Requested in EPA Comments on the Draft Baseline Human Health Risk Assessment			The cumulative impact of EPA’s new requests and

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			requirements for the BHHRA, in the context of all other new EPA requests and requirements, is to delay the resubmittal date by 3 months, from end of 2010 to early second quarter 2011. This delay is driven primarily by resources and time being diverted to gathering the additional information and/or compiling existing data to support the uncertainty assessment, making major revisions to the draft BHHRA in redline-strikeout (RLSO) format, reconciling comments from LWG reviewers, and producing a final revised draft BHHRA in RLSO for EPA review.
<b>New Information or Analysis Requested in EPA Comments on the Draft Baseline Ecological Risk Assessment</b>			
Requiring TZW to be evaluated as a line of evidence	Initial Draft BERA Comments (12/23/2009)	Carry TZW all the way through the BERA as a line of evidence for benthic community and benthic fish, rather than screening and passing forward to the FS	1 month
Direction to revise reference envelope calculations	Emails from Eric Blischke 7/17/2009 and 7/31/2009	Recalculate reference envelope values including direction on treatment of duplicate values, data transformations, calculation of mortality and biomass endpoints, and hit classifications	Already completed for the 11/13/09 Benthic Toxicity Reanalysis TM and the 4/2/10 Individual Endpoints TM.
Evaluation of dioxin in water, sediment, tissue, TZW	EPA BERA Comments 16, 79	Screen individual congeners in uncertainty section based on 2,3,7,8-TCDD.	1 week
Evaluation of DLs for	EPA BERA Comment 19	Deviate from SLERA rules and evaluate additional chemical in	1 day

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toxaphene, a chemical that was never detected.		uncertainty	
Upstream risks	EPA BERA Comment 70	Characterize upstream fish sizes and associated uncertainty in risk characterization	1 week
Evaluation of DDx ratios to identify recent/ongoing sources	EPA BERA Comment 71	Calculate ratios of DDx isomers and spatial comparison to identify ongoing or recent sources.	1 day
Evaluation of non-hazardous substances	EPA BERA Comment 83	Characterize risks from non-hazardous substances such as total petroleum fractions	1 week
“Validation” of food web model	EPA BERA Comments 108, 158	“Validate” the food web model based on BSAFs and BSARs	2 weeks
Revision of the discussion of copper olfactory effects on salmon with updated information.	EPA BERA Comment 133	Conduct additional literature review and writing.	1 week
Conduct uncertainty analysis of feeding rates, foraging areas, prey home ranges, and diet composition for each species	EPA BERA Comments 105, 150, and clarification in October 15, 2010 meeting.	Perform sensitivity analyses for the indicated variables.	4 weeks
Osprey egg data	EPA BERA Comment 154	Incorporate recent osprey egg data in exposure assessment	4 weeks
Comment on FPM SQG development	Email from Eric Blischke 1/26/2010	Develop floating percentile models for individual toxicity endpoints, rather than pooled endpoint	Already completed for the 4/2/10 Individual Endpoints TM
How chemicals were retained/excluded from FPM	EPA BERA Comment 228	Compile plots displaying range of chemical concentrations for hit/no-hit samples	1 week
Effect of chemical order in the FPM	EPA BERA Comment 233	Analyze the effect of chemical order for inclusion in the uncertainty section	1 week
Performance criteria selected FPM	EPA BERA Comment 255	Rerun the FPM with a range of false negative rates (5%, 10%, 15%, 20% and 25%) and evaluate the reliability of each	2 weeks
Determine reliability	EPA BERA Comments 255, 264	Calculate a suite of reliability statistics for every model run and use as the basis of selecting final model. Calculate same statistics	4 weeks

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		for generic SQGs. This analysis will also require development of interpret criteria/thresholds since EPA has not provided any.	
Use of LRM	EPA BERA comments and meetings with EPA and its partners on 10/22/2010 and 11/4/2010	Inclusion of a Logistic Regression Model (LRM) in the BERA to characterize potential risks to the benthic community.	1 months (subject to change based on outcome of benthic modeling discussions with EPA)
Determination of statistical differences between chemical concentrations characterizing hit and no-hit bioassays	EPA Benthic comments	Use non-parametric tests to “confirm” ANOVA results	2 weeks
Cumulative Impact of New Information or Analysis Requested in EPA Comments on the Draft Baseline Ecological Risk Assessment			The cumulative impact of EPA’s new requests and requirements for the BERA, in the context of all other new EPA requests and requirements, is to delay the earliest reasonable resubmittal date by 5-6 months, from end of 2010 to late second quarter 2011. This delay is driven primarily by resources and time being diverted to reviewing these new issues (primarily the benthic risk assessment issues), gaining clarification from EPA on unstated nuances of many of them, negotiating resolutions, executing the new work, making major revisions to the draft BERA in redline-

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			strikeout (RLSO) format, reconciling comments from LWG reviewers, and producing a final revised draft BERA in RLSO for EPA review.

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**Table 2. Level of Additional Effort Resulting from “New” Information or Analysis Requested in EPA Comments on the Draft RI Report, Baseline Human Health Risk Assessment, and Baseline Ecological Risk Assessment – Comments with which the LWG Disagrees**

<b>New<sup>1</sup> EPA Comment Issue</b>	<b>Comment No./Source</b>	<b>Summary of Issue</b>	<b>Level of Additional Effort<sup>2</sup></b>
<b>New Information or Analysis Requested in EPA Comments on the Draft RI</b>			
Data Lockdown Date	EPA RI Comments S23, S218	Update SCRA database with data collected since June 2008 draft RI data lockdown date, including new data from the downtown reach (City of Portland Phase 2, PGE, MGP), RM 11E sediment characterization, dredged material characterizations (Vigor, Kinder-Morgan, Chevron, Glacier NW, CLD, Ash Grove Cement), US Moorings RI, T4 Abatement, Arco Terminal 22T Revetment, Post Office Bar, Northwest Pipe & Casing, Triangle Park Riparian, Zidell South Waterfront, and EPA’s PBDE sediment data and osprey egg data (the latter to be added to the RA data set also). Update RI Section 5.6 data products and narrative based on the new data. Develop new RM 11 – 11.8 and downtown reach (RM 11.8 – 15.6) surface and subsurface coreplot maps for all sediment ICs. A bibliography of all new studies included in SCRA will be provided.	Following EPA approval of the list of data sets to be added, this update will take 6-8 weeks to complete. All revisions which are dependent on the updated SCRA cannot begin until this task is completed.
Section 10.2 Upland Source Linkage Narrative	EPA RI Comments G8, S81, S107, S235, S306, S313, S314, S318, S326, S327, S352	Revise Section 10.2 format per new outline provided by EPA.	2-4 week revision effort. This will also add 2-4 weeks to the LWG review process. Because this revision relies, in large part, on the completion of all other RI sections, this request likely adds 4-6 weeks to the overall RI revision schedule.

<sup>1</sup> EPA comments that request or direct LWG to included new information, data, analyses, and evaluations that were not anticipated, requested, or agreed-upon as part of the initial scoping of these documents.

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Cumulative Impact of New Information or Analysis Requested in EPA Comments on the Draft RI			The cumulative impact of EPA’s new requests and requirements for the RI, in the context of all other new EPA requests and requirements, is to delay the resubmittal date by 4-5 months, from end of 2010 to early third quarter 2011. This delay is driven primarily by resources and time being diverted to negotiating the unresolved comment, gathering the additional information and/or compiling existing data to support the uncertainty assessment, making major revisions to the draft RI in redline-strikeout (RLSO) format, reconciling comments from LWG reviewers, and producing a final revised draft RI in RLSO for EPA review.
<b>New Information or Analysis Requested in EPA Comments on the Draft Baseline Human Health Risk Assessment</b>			
PBDE Fish Tissue Data	Email from Chip Humphrey on 11/4/10 (Not included in earlier EPA comments)	EPA is requesting that the PBDE fish tissue data be included in the revised BHHRA.	Depending on how the data are included, 1-2 weeks.
Cumulative Impact of New Information or Analysis Requested in EPA Comments on the Draft Baseline Human Health Risk Assessment			The cumulative impact of EPA’s new requests and requirements for the BHHRA, in the context of all other new

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	<p>EPA requests and requirements, is to delay the resubmittal date by 3-4 months, from end of 2010 to early second quarter 2011. This delay is driven primarily by resources and time being diverted to negotiating the unresolved comment, gathering the additional information and/or compiling existing data to support the uncertainty assessment, making major revisions to the draft BHHRA in redline-strikeout (RLSO) format, reconciling comments from LWG reviewers, and producing a final revised draft BHHRA in RLSO for EPA review.</p>
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